1. (Currently amended) An automatable method for identifying cancer cells and their precursor cells in a cell sample or tissue sample, said method comprising the following steps:

a) selecting at least two molecular markers of cancer, wherein the detection of each of said markers alone is not a reliable indicator of the presence of cancer cells and their precursor cells in said cell sample or tissue sample,

b) contacting the cell sample or tissue sample with signaling reagents that specifically bind to said at least two molecular markers,

c) simultaneously detecting signal intensities from the markers within a single cell of said cell sample or within a constituent region of a section of said tissue sample,

d) combining and accrediting the signal intensities detected, and comparing the combined and accredited signal intensities to a threshold value, wherein combined and accredited signal intensities above or below the threshold value indicate the presence of cancer cells and their precursors in said cell sample or tissue sample, wherein steps b)-d) collectively comprise:

i) staining each marker an individual color that is different from a color that every other marker is stained;

ii) defining a threshold value for a plurality of secondary colors of mixtures of said individual colors;

iii) determining the presence of multiple markers with a single cell of said cell sample or within a constituent region of a section of said tissue sample by detecting the secondary color of a mixture of said individual colors

within said cell or within said constituent region of said tissue sample section; and

iv) relating the secondary color detected to the threshold value, wherein a value of the secondary color detected above or below the threshold value is predetermined to be indicative of the presence of cancer cells and their precursors in the cell sample or tissue sample.

2. (Previously Presented) The method according to claim 1, further comprising the step of automatically processing the signal intensities into image information and consolidating said information into a proposed diagnosis using a linked diagnostic expert system.

3. (Previously Presented) The method according to claim 1, wherein the signaling reagents produce chromogenic color or fluorescence.

4. (Previously Presented) The method according to claim 1, wherein the at least two molecular markers are selected from the group consisting of:

her2/neu and Ki67, her2/neu and p53, her2/neu and bcl-2, her2/neu and MN, her2/neu and mdm-2, her2/neu and EGF receptor, bcl-2 and Ki67, bcl-2 and MN, bcl-2 and mdm-2, bcl-2 and EGF receptor, her2/neu and bcl-2, p53 and bcl-2, p53 and MN, p53 and mdm-2, p53 and EGF receptor, p16 and p53, p16 and MN, p16 and mdm-2, p16 and EGF receptor, p16 and Ki67, p16 and her2/neu, p16 and bcl-2, MN and mdm-2, MN and EGF receptor, mdm-2 and EGF receptor.

5. (Previously Presented)The method according to claim 1, wherein the sample is obtained from tumors of the mammary gland, the lung, the cervix, the colon, the skin and the prostate.

6. (Cancelled.)

7. (Currently Amended) A test kit for implementing the method according to claim 1 comprising:

a) reagents for detecting at least two molecular markers of cancer in a cell sample or tissue sample, wherein each of the markers is one which, when detected, is not alone a reliable indicator of the presence of cancer cells and their precursor cells in said cell sample or tissue sample,

b) auxiliary agents,

c) controls, and

d) protocols for conducting said method.

8. (Previously Presented) The method according to claim 1, wherein the at least two molecular markers are selected from the group consisting of her2/neu, p16, p53, Ki67, MN, mdm-2, bcl-2, and EGF receptor.

9. (Previously Presented) The method according to claim 1, wherein step c) comprises simultaneously detecting signal intensities from the markers within a cell.

10. (Previously Presented) The method according to claim 1, wherein step c) comprises simultaneously detecting signal intensities from the markers within a constituent region of a section of said tissue sample.

11. Canceled